

## Geometry Homework Worksheets: Chapter 2

### HW #6: Problems #1 – 11

Show all of your work!

For #1-3, choose the best answer for each multiple choice question.

- Which of the following statements is/are always true?
  - adjacent angles are acute
  - if  $m\angle 2 = 70^\circ$ , then  $\angle 2$  is acute
  - two acute angles make a right angle
  - I only
  - II only
  - III only
  - both I and II
  - I, II, and III
- Identify the converse of the conditional statement below:

If I break my iPod, I will get in trouble.

  - If I don't break my iPod, I won't get in trouble.
  - If I break my iPod, I will get in trouble.
  - If I get in trouble, I will break my iPod.
  - If I don't get in trouble, I didn't break my iPod.
  - none of the above
- Identify a counterexample to the given statement:

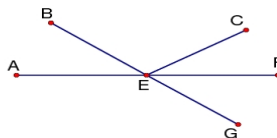
If  $\angle A$  is obtuse, then  $m\angle A = 120^\circ$

  - $\angle A$  is an acute angle
  - $\angle A$  is a right angle
  - $m\angle A = 120^\circ$
  - $m\angle A = 80^\circ$
  - $m\angle A = 110^\circ$

For questions 4-7 translate each of the following into a mathematical expression.

- The difference of four times a number and seven.
- Three times the difference of a number and two.
- The sum of two and the quotient of a number and five.
- The product of four times a number and nine.

For questions 8-11, justify each statement with a definition, postulate, or theorem. Refer to the figure on the right.



- If E is the midpoint of  $\overline{AF}$ ,  $\overline{AE} \cong \overline{EF}$ .
- $AE + EF = AF$
- If  $\overline{BG}$  bisects  $\overline{AF}$ , then E is the midpoint of  $\overline{AF}$ .
- $m\angle AEC + m\angle CEF = 180^\circ$ .